



September 1, 2004

Please make below changes to the following document:

Washington State Department of Natural Resources. 2004. Final Environmental Impact Statement on Alternatives for Sustainable Forest Management of State Trust Lands in Western Washington and for Determining the Sustainable Harvest Level. Olympia, Washington.

Replace attached contents for those in the same location in the originally published document:

- Pages 4-104 and 4-105 in Section 4.6.3.4 of Chapter 4,
- Table B.3-1 on page B-66 of Section B.3 in Appendix B, and
- Table D-12 on page D-54 of Section D.4 in Appendix D.



Chapter 4

Surface Erosion

ROADS AND THE ALTERNATIVES

Forest roads are an integral part of forest management (Habitat Conservation Plan, page IV.62-68). DNR has an important and considerable task of repairing and maintaining approximately 14,000 miles of forest roads statewide. It is expected that roads will be added and deleted to meet financial, social, and environmental objectives.

It is not expected that the number of road miles or road density will vary as a result of the implementation of any of the proposed Alternatives. Below is a discussion of DNR's obligations for roads management, and an analysis of DNR's road network, both present and future. An analysis of differences among the Alternatives with respect to levels of surface erosion and truck traffic resulting from harvest levels proposed under different Alternatives can be found in this section, and in Chapter 4, Section 4.11, respectively.

The Alternatives and the Habitat Conservation Plan

The basic structure of Habitat Conservation Plan (HCP) commitments for forest roads is stated in the *Riparian Conservation Strategy for the Five Westside Planning Units*, Part IV, Section D. DNR committed to the following principles for road network management:

1. Minimization of active road density;
2. Site-specific assessments of alternative harvesting systems that require less road construction;
3. A base line inventory of roads and stream crossings;
4. A prioritized system for road decommissioning, upgrading, and maintenance; and
5. Identification of fish blockages caused by stream crossing structures, and a prioritized approach to repair or removal.

In addition, RCW 76.09, the Forest Practices Act, regulates DNR. This Act contains many sections designed to provide regulations for protection of the environment. The Forest and Fish regulations were passed into law after DNR's Habitat Conservation Plan agreement, and have significantly raised the level of environmental protection with respect to road management, unstable slopes, and fish blockage repair. Additionally, each road that is constructed is further evaluated under the State Environmental Policy Act as a part of DNR's review of timber sale projects occurring on state lands.

There have been a number of accomplishments related to roads management since the HCP was implemented, including:

1. Baseline inventory of roads completed in December 1999;
2. Inventory of all stream crossings and assessment and prioritization of culvert blockages completed in April 2001;
3. 223 fish blockages repaired or abandoned;
4. 907 miles of road decommissioned or abandoned;
5. HCP guidelines for assessment of potentially unstable slopes completed in September 2003; and



6. As of December 31, 2003, approximately 75 percent of HCP Planning Unit roads completed under approved Road Maintenance and Abandonment Plans according to Forest and Fish regulations. The law requires DNR to be 60 percent complete.

Harvest Timings

While the Final Environmental Impact Statement (EIS) Alternatives propose different harvest timings and locations, the basic road network statewide will evolve to the end condition, over time, virtually independent of which Alternative is chosen. As stated in DNR's HCP, "In considering road densities, it is assumed that the current emphasis on small staggered settings with green-up requirements, and partial-cut silvicultural systems designed to achieve environmental objectives will continue. These systems will, by their nature, result in more extensive road systems, which will be active for longer periods of time. While expansion is inevitable, as new areas are accessed, DNR's goal will be to reduce the additional amount of new roads needed through careful planning, and control the overall size of the network by effective abandonment" (Part IV section D, page 66).

DNR carefully weighs the impacts of roads with regards to environmental protection, public use, and forestland management needs. Where appropriate, roads are abandoned. Also where appropriate, DNR uses alternative harvest systems. A specific road density target was not set in the HCP because such a target would compromise the environmental and economic management of DNR's road networks.

Road-spacing is mostly dependent on topography. Topography drives the type of logging system used to achieve the desired silvicultural objectives, which in turn dictates optimal yarding distance to road-spacing combinations.

Road Density

Below is a road density analysis for western Washington forested trust lands using the distribution of deferral classes that would be implemented for the Preferred Alternative. Acreages in each deferral classification differ by Alternative, but road densities by deferral class are analogous for all Alternatives.

Table 4.6-3 shows the distribution of roads and their density on western Washington forested trust lands, including Natural Area Preserves and Natural Resource Conservation Areas. The data identify density (expressed in average number of road miles per square mile).

The analysis shows that there is a small difference in road density on the average for lands that are currently on-base versus what is in short-term deferral. It also identifies that while there are areas that are in long-term deferral, such lands will often already contain roads necessary to manage nearby forested trust lands.



Appendix B

Table B.3-1. Westside Sustainable Forestry Harvest Levels in Million Board Feet per Year, by Ownership Group, for Period 2004-2067

Trust Group	Ownership Group	Alternative 1							Alternative 2							Alternative 3							Alternative 4							Alternative 5							Preferred Alternative									
		1 ^{1/}	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7	1	2	3	4	5	6	7			
Federal Granted Trusts	DNR Central Region	42	41	42	42	43	44	38	66	65	70	71	68	76	75									62	69	68	56	64	72	54																
	DNR Northwest Region	44	41	23	34	32	38	47	56	57	41	60	59	59	53									48	49	49	38	50	51	51																
	DNR Olympic Region	7	8	7	8	7	7	8	17	15	16	13	14	14	13									14	14	13	14	12	14	14																
	DNR South Puget Sound Region	41	40	41	30	27	24	25	34	34	36	35	34	36	36									24	25	25	25	26	26	26																
	DNR Southwest Region	56	55	55	44	43	44	45	65	61	54	66	64	55	56									56	58	58	51	58	56	61																
	Federal Grants as one group																														260	334	295	254	243	254	265	307	245	214	211	261	244	265		
	Capitol State Forest	39	38	39	39	35	39	37	42	46	47	51	43	43	33									39	38	39	32	38	41	36																
	OESF ^{2/}	18	20	28	29	29	29	30	63	55	93	89	91	89	97									10	8	7	9	12	13	12	136	109	113	112	103	91	47	77	58	105	94	95	91	80		
Forest Board Transfer	Clallam County	7	7	7	6	7	7	6	15	27	16	17	17	19	16									17	17	17	17	17	17	17	23	24	23	19	23	23	21	20	19	16	17	14	16	15		
	Clark County	12	12	12	12	11	11	7	13	16	10	13	12	13	6									10	10	10	10	10	10	10	13	12	13	12	11	12	15	10	14	7	13	8	9	6		
	Cowlitz County	5	5	5	5	5	5	4	6	6	5	5	5	4	4									5	5	5	5	5	5	5	6	6	5	5	6	6	4	5	6	3	4	4	4	2		
	Grays Harbor Co.	0	0	0	0	0	0	0	0	0	0	0	0	0	0									0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Jefferson County	5	5	4	4	3	3	4	6	6	7	5	5	5	5									3	3	4	3	4	4	4	7	6	6	6	7	7	6	6	7	5	5	5	4	4		
	King County	9	10	10	8	9	5	4	8	8	8	8	8	8	8									6	6	6	6	6	6	6	11	12	10	8	10	9	10	10	5	3	7	10	8	10		
	Kitsap County	3	2	2	2	2	1	2	3	4	2	3	3	3	3									2	2	2	2	2	3	2	3	2	3	4	3	3	2	2	2	2	2	2	2			
	Lewis County	15	15	14	14	14	14	14	21	21	19	20	19	17	20									18	19	17	18	18	19	19	22	18	20	19	21	19	21	18	17	18	15	16	13	12		
	Mason County	8	8	7	6	4	3	3	9	9	8	10	9	10	8									7	7	6	7	7	5	9	8	7	9	10	10	10	5	8	5	4	4	9	3			
	Pacific County	4	4	5	5	5	5	5	8	8	8	9	8	8	8									7	7	7	7	7	7	7	9	13	9	7	7	10	6	10	8	8	7	7	7	9		
	Pierce County	4	4	4	4	4	4	4	4	4	4	4	5	4	6	4								1	1	1	1	1	1	1	5	6	5	5	3	5	4	7	3	4	4	4	3	2		
	Skagit County	30	28	20	27	29	30	32	35	37	31	39	38	41	38									32	32	18	34	33	35	35	36	50	32	38	38	36	37	49	18	33	34	36	36	32		
	Skamania Co.	5	7	7	7	7	7	7	14	11	15	10	13	15	7									3	4	5	4	5	5	5	15	14	15	14	12	18	17	21	13	10	9	19	12	12		
	Snohomish Co.	23	23	23	24	21	23	24	28	30	30	30	29	31	29									27	27	28	27	27	27	21	27	40	31	32	29	28	32	27	23	22	22	23	24	24		
	Thurston County	3	3	3	3	3	3	3	6	2	6	2	5	1	2									3	3	3	3	3	3	3	4	4	4	4	4	4	5	5	3	4	3	3	4	3		
Wahkiakum Co.	4	4	4	4	4	4	3	5	5	5	5	5	6	6									6	6	6	6	6	6	6	7	9	8	8	6	7	8	6	5	5	5	5	4	5			
Whatcom County	11	11	11	10	10	10	11	14	16	15	16	16	14	15									13	13	13	13	13	13	13	13	18	19	13	16	14	15	14	11	11	11	13	13	13			
All trusts as one Westside group																663	737	479	655	883	626	738																								
Westside harvest level		396	391	374	364	352	360	364	537	541	546	582	568	572	541	663	737	479	655	883	626	738	411	422	406	389	424	437	414	648	738	663	613	598	601	575	636	514	506	511	559	537	528			

1/ Numbers represent average annual harvest for each decade period (1= 2004 to 2013, 2 = 2014 to 2023, etc.) except 7, which represents four years (2064 to 2067)

2/ OESF = Olympic Experimental State Forest



Appendix D

Table D-12. Estimated Proportion of Western Washington Forested State Trust Lands in Different Forest Habitat Types under Each Alternative

Forest Type	Alternative	2004 ^{1/}	2013	2031	2067
Ecosystem Initiation	1	8%	7%	6%	9%
	2	8%	9%	8%	10%
	3	7%	11%	10%	11%
	4	7%	5%	8%	8%
	5	10%	12%	13%	11%
	PA	8%	13%	8%	11%
Competitive Exclusion	1	68%	70%	70%	65%
	2	68%	69%	69%	64%
	3	68%	67%	67%	64%
	4	68%	71%	69%	65%
	5	66%	67%	66%	65%
	PA	68%	66%	65%	60%
Structurally Complex	1	25%	23%	24%	27%
	2	24%	22%	23%	26%
	3	24%	22%	22%	25%
	4	25%	23%	23%	27%
	5	24%	21%	21%	23%
	PA	24%	22%	26%	29%

Source: DNR Alternative modeling output data

1/ Model runs used to estimate the future availability of different forest structure classes under the Alternatives were started in 2001 to “clean” the inventory of sales sold between 2001 and 2003. In addition, the models for Alternative 5 and the Preferred Alternative used a different method than the other Alternatives for calculating yield (which was used as the basis for determining forest structure classes). The models for Alternative 5 and the Preferred Alternative used value-based yield tables, whereas those for Alternatives 1 through 4 were volume-based. These two factors account for the differences in Year 2004 values among the Alternatives.

Notwithstanding the dissimilar starting points, the differences among the general trends in the rates at which the amount of the forest structure classes change provides a basis for comparing the effects of the Alternatives.

PA = Preferred Alternative

Table D-13. Estimate of Percent Change from the Current Amount of Spotted Owl Dispersal Habitat under Each Alternative

Alternative	2013	2031	2067
1	- 6	- 3	+ 9
2	- 10	- 6	+ 8
3	- 11	- 8	+ 3
4	- 5	- 6	+ 10
5	- 11	- 11	- 1
PA	- 11	+ 8	+ 18

Source: DNR Alternative modeling output data

Note: The current amount of dispersal habitat does not refer to designated dispersal habitat, but rather uses the structurally complex forest structure as surrogate.

PA = Preferred Alternative